

In the Claims:

Please amend claims 1, 31, 61-64, 66, 67, 69-72, 74, 75, 77-79, 81, 82, and 84-90 as indicated below. A complete listing of claims follows.

1. (Currently amended) A method for handling fabric state changes, comprising:

a host system receiving from a fabric coupled to the host system an event indicating a fabric state change for one or more host adapter ports of said host system; and

the host system dynamically changing the host system's fabric device configuration in response to said receiving an event;

wherein said host system dynamically changing comprises the host system bringing online or taking offline one or more fabric-attached mass storage devices for the one or more host adapter ports for the host system;

wherein said bringing online comprises creating, within an operating system executing on the host system, an operating system node corresponding to each of the one or more fabric-attached mass storage devices being brought online;

wherein said taking offline comprises disabling, within the operating system executing on the host system, an operating system node corresponding to each of the one or more fabric-attached mass storage devices being taken offline;

wherein each given operating system node provides a communication interface to a given corresponding fabric-attached mass storage device, and wherein an application running on said host system is configured to communicate

with said given corresponding fabric-attached mass storage device through said given operating system node.

2. (Original) The method as recited in claim 1, further comprising determining an event type for said event.

3. (Previously presented) The method as recited in claim 2, wherein in response to determining that the event type indicates that one of the fabric host adapter ports has lost connectivity to the fabric, said dynamically changing comprises taking offline one or more fabric devices configured through the host adapter port that lost connectivity to the fabric.

4. (Original) The method as recited in claim 3, wherein said taking offline one or more fabric devices configured through the host adapter port that lost connectivity to the fabric comprises:

reading a persistent repository that indicates which fabric devices are currently online for the host adapter port that lost connectivity to the fabric; and

taking offline the fabric devices indicated by the persistent repository for the host adapter port that lost connectivity to the fabric.

5. (Canceled)

6. (Previously presented) The method as recited in claim 2, wherein in response to determining that the event type indicates that one of the fabric host adapter ports has lost connectivity to the fabric, said dynamically changing comprises:

accessing a configuration file for the host adapter port that lost connectivity to the fabric to determine if fabric devices for that host adapter port are to be unconfigured if that host adapter port loses connectivity to the fabric; and

if the configuration file indicates that fabric devices are to be unconfigured upon lose of connectivity to the fabric, taking offline one or more fabric devices configured through the host adapter port that lost connectivity to the fabric.

7. (Original) The method as recited in claim 6, wherein taking offline one or more fabric devices configured through the host adapter port that lost connectivity to the fabric comprises:

reading a persistent repository that indicates which fabric devices are currently online for the host adapter port that lost connectivity to the fabric; and

taking offline the fabric devices indicated by the persistent repository for the host adapter port that lost connectivity to the fabric.

8. (Canceled)

9. (Original) The method as recited in claim 6, further comprising, prior to said receiving an event:

a host adapter driver for one of the one or more host adapter ports becoming inactive or detached; and

generating the event indicating that one of the one or more host adapter ports has lost connectivity to the fabric.

10. (Previously presented) The method as recited in claim 6, wherein said accessing a configuration file for the host adapter port that lost connectivity to the fabric comprises reading a user-defined attribute in the configuration file, wherein the user-

define attribute indicates whether or not fabric devices for that host adapter port are to be unconfigured if that host adapter port loses connectivity to the fabric.

11. (Previously presented) The method as recited in claim 2, wherein in response to determining that the event type indicates that one of the fabric host adapter ports has acquired connectivity to the fabric, said dynamically changing comprises bringing online one or more fabric devices for the host adapter port that has acquired connectivity to the fabric.

12. (Original) The method as recited in claim 11, wherein said bringing online one or more fabric devices for the host adapter port that has acquired connectivity to the fabric comprises:

reading a persistent repository that indicates which fabric devices were previously online for the host adapter port that has acquired connectivity to the fabric;
and

bringing online the fabric devices indicated by the persistent repository for the host adapter port that has acquired connectivity to the fabric.

13. (Canceled)

14. (Previously presented) The method as recited in claim 2, wherein in response to determining that the event type indicates that one of the fabric host adapter ports has acquired connectivity to the fabric, said dynamically changing comprises:

accessing a configuration file for the host adapter port that has acquired connectivity to the fabric to determine if fabric devices for that host adapter port are to be configured if that host adapter port acquires connectivity to the fabric; and

if the configuration file indicates that fabric devices are to be configured upon that host adapter port's connectivity to the fabric, bringing online one or more fabric devices for that host adapter port that has acquired connectivity to the fabric.

15. (Original) The method as recited in claim 14, wherein bringing online one or more fabric devices configured through the host adapter port that has acquired connectivity to the fabric comprises:

reading a persistent repository that indicates which fabric devices were previously online for the host adapter port that has acquired connectivity to the fabric;
and

bringing online the fabric devices indicated by the persistent repository for the host adapter port that has acquired connectivity to the fabric.

16. (Canceled)

17. (Original) The method as recited in claim 14, further comprising, prior to said receiving an event:

a host adapter driver for one of the one or more host adapter ports becoming active or attached; and

generating the event indicating that one of the one or more host adapter ports has acquired connectivity to the fabric.

18. (Original) The method as recited in claim 14, wherein said accessing a configuration file for the host adapter port that has acquired connectivity to the fabric comprises reading a user-defined attribute in the configuration file, wherein the user-

define attribute indicates whether or not fabric devices for that host adapter port are to be configured if that host adapter port acquires connectivity to the fabric.

19. (Previously presented) The method as recited in claim 2, wherein in response to determining that the event type indicates that a new fabric device has been connected to the fabric, said dynamically changing comprises bringing online the new fabric device for one of the one or more host adapter ports.

20. (Canceled)

21. (Original) The method as recited in claim 19, wherein said bringing online the new fabric device comprises updating a persistent repository to indicate that the new fabric device is online for the host adapter port.

22. (Previously presented) The method as recited in claim 2, wherein in response to determining that the event type indicates that a new fabric device has been connected to the fabric, said dynamically changing comprises:

accessing a configuration file for one of the one or more host adapter ports to determine if newly connected fabric devices for that host adapter port are to be dynamically configured; and

if the configuration file indicates newly connected fabric devices are to be dynamically configured, bringing online the new fabric device for that host adapter port.

23. (Canceled)

24. (Original) The method as recited in claim 22, wherein said bringing online the new fabric device comprises updating a persistent repository to indicate that the new fabric device is online for the host adapter port.

25. (Original) The method as recited in claim 22, further comprising, prior to said receiving an event:

connecting the fabric device to the fabric; and

a fabric driver generating the event indicating that the new fabric device has been connected to the fabric.

26. (Original) The method as recited in claim 22, wherein said accessing a configuration file comprises reading a user-defined attribute in the configuration file, wherein the user-defined attribute indicates whether or not newly connected fabric devices for that host adapter port are to be dynamically configured upon detection.

27. (Original) The method as recited in claim 1, wherein the one or more host adapter ports comprise Fibre Channel host adapter ports.

28. (Original) The method as recited in claim 1, wherein the fabric comprises a Fibre Channel switched fabric comprising a plurality of Fibre Channel switches.

29. (Previously presented) The method as recited in claim 1, wherein the fabric is part of a storage area network (SAN).

30. (Previously presented) The method as recited in claim 1, wherein said dynamically changing comprises verifying the one or more fabric-attached mass storage devices before bringing the one or more fabric-attached mass storage devices online, wherein said verifying comprises accessing a fabric name server to determine if the one or more fabric-attached mass storage devices are currently connected to the fabric.

31. (Currently amended) A host system, comprising:

one or more host adapter ports for coupling to a fabric;

a fabric event agent configured to:

receive from said fabric an event indicating a fabric state change for one or more of the host adapter ports; and

dynamically change the host system's fabric device configuration in response to said receiving an event;

wherein the fabric event agent is configured to dynamically change the host system's fabric device configuration by bringing online or taking offline one or more fabric-attached mass storage devices for the one or more host adapter ports for the host system;

wherein to bring online said one or more fabric-attached mass storage devices, the fabric event agent is further configured to create, within an operating system executable on the host system, an operating system node corresponding to each of the one or more fabric-attached mass storage devices being brought online;

wherein to take offline said one or more fabric-attached mass storage devices, the fabric event agent is further configured to disable, within the operating system executable on the host system, an operating system node corresponding to each of the one or more fabric-attached mass storage devices being taken offline;

wherein each given operating system node provides a communication interface to a given corresponding fabric-attached mass storage device, and wherein an application running on said host system is configured to communicate

with said given corresponding fabric-attached mass storage device through said given operating system node.

32. (Original) The host system as recited in claim 31, wherein the fabric event agent is further configured to determine event type for said event.

33. (Previously presented) The host system as recited in claim 32, wherein in response to determining that the event type indicates that one of the fabric host adapter ports has lost connectivity to the fabric, the fabric event agent is further configured to dynamically change the host system's fabric device configuration by taking offline one or more fabric devices configured through the host adapter port that lost connectivity to the fabric.

34. (Previously presented) The host system as recited in claim 33, wherein to take offline one or more fabric devices configured through the host adapter port that lost connectivity to the fabric, the fabric event agent is further configured to:

read a persistent repository that indicates which fabric devices are currently online for the host adapter port that lost connectivity to the fabric; and

take offline the fabric devices indicated by the persistent repository for the host adapter port that lost connectivity to the fabric.

35. (Canceled)

36. (Previously presented) The host system as recited in claim 32, wherein in response to determining that the event type indicates that one of the fabric host adapter ports has lost connectivity to the fabric, the fabric event agent is further configured to dynamically change the host system's fabric device configuration by:

accessing a configuration file for the host adapter port that lost connectivity to the fabric to determine if fabric devices for that host adapter port are to be unconfigured if that host adapter port loses connectivity to the fabric; and

if the configuration file indicates that fabric devices are to be unconfigured upon lose of connectivity to the fabric, taking offline one or more fabric devices configured through the host adapter port that lost connectivity to the fabric.

37. (Previously presented) The host system as recited in claim 36, wherein to take offline one or more fabric devices configured through the host adapter port that lost connectivity to the fabric, the fabric event agent is further configured to:

read a persistent repository that indicates which fabric devices are currently online for the host adapter port that lost connectivity to the fabric; and

take offline the fabric devices indicated by the persistent repository for the host adapter port that lost connectivity to the fabric.

38. (Canceled)

39. (Original) The host system as recited in claim 36, further comprising:

a host adapter driver for one of the one or more host adapter ports; and

a fabric driver configured to generate the event indicating that one of the one or more host adapter ports has lost connectivity to the fabric.

40. (Previously presented) The host system as recited in claim 36, wherein to access said configuration file for the host adapter port that lost connectivity to the fabric, the fabric event agent is further configured to read a user-defined attribute in the

configuration file, wherein the user-defined attribute indicates whether or not fabric devices for that host adapter port are to be unconfigured if that host adapter port loses connectivity to the fabric.

41. (Previously presented) The host system as recited in claim 32, wherein in response to determining that the event type indicates that one of the fabric host adapter ports has acquired connectivity to the fabric, the fabric event agent is further configured to dynamically change the host system's fabric device configuration by bringing online one or more fabric devices for the host adapter port that has acquired connectivity to the fabric.

42. (Previously presented) The host system as recited in claim 41, wherein to bring online one or more fabric devices for the host adapter port that has acquired connectivity to the fabric, the fabric event agent is further configured to:

read a persistent repository that indicates which fabric devices were previously online for the host adapter port that has acquired connectivity to the fabric;
and

bring online the fabric devices indicated by the persistent repository for the host adapter port that has acquired connectivity to the fabric.

43. (Canceled)

44. (Previously presented) The host system as recited in claim 32, wherein in response to determining that the event type indicates that one of the fabric host adapter ports has acquired connectivity to the fabric, the fabric event agent is further configured to dynamically change the host system's fabric device configuration by:

accessing a configuration file for the host adapter port that has acquired connectivity to the fabric to determine if fabric devices for that host

adapter port are to be configured if that host adapter port acquires connectivity to the fabric; and

if the configuration file indicates that fabric devices are to be configured upon that host adapter port's connectivity to the fabric, bringing online one or more fabric devices for that host adapter port that has acquired connectivity to the fabric.

45. (Previously presented) The host system as recited in claim 44, wherein to bring online one or more fabric devices configured through the host adapter port that has acquired connectivity to the fabric, the fabric event agent is further configured to:

read a persistent repository that indicates which fabric devices were previously online for the host adapter port that has acquired connectivity to the fabric; and

bring online the fabric devices indicated by the persistent repository for the host adapter port that has acquired connectivity to the fabric.

46. (Canceled)

47. (Previously presented) The host system as recited in claim 44, further comprising:

a host adapter driver for one of the one or more host adapter ports becoming active or attached prior to said receiving an event; and

a fabric driver configured to generate the event indicating that one of the one or more host adapter ports has acquired connectivity to the fabric.

48. (Previously presented) The host system as recited in claim 44, wherein to access said configuration file for the host adapter port that has acquired connectivity to the fabric, the fabric event agent is further configured to read a user-defined attribute in the configuration file, wherein the user-defined attribute indicates whether or not fabric devices for that host adapter port are to be configured if that host adapter port acquires connectivity to the fabric.

49. (Previously presented) The host system as recited in claim 32, wherein in response to determining that the event type indicates that a new fabric device has been connected to the fabric, the fabric event agent is further configured to dynamically change the host system's fabric device configuration by bringing online the new fabric device for one of the one or more host adapter ports.

50. (Canceled)

51. (Previously presented) The host system as recited in claim 49, wherein to bring online the new fabric device, the fabric event agent is further configured to update a persistent repository to indicate that the new fabric device is online for the host adapter port.

52. (Previously presented) The host system as recited in claim 32, wherein in response to determining that the event type indicates that a new fabric device has been connected to the fabric, the fabric event agent is further configured to dynamically change the host system's fabric device configuration by:

accessing a configuration file for one of the one or more host adapter ports to determine if newly connected fabric devices for that host adapter port are to be dynamically configured; and

if the configuration file indicates newly connected fabric devices are to be dynamically configured, bringing online the new fabric device for that host adapter port.

53. (Canceled)

54. (Previously presented) The host system as recited in claim 52, wherein to bring online the new fabric device, the fabric event agent is further configured to update a persistent repository to indicate that the new fabric device is online for the host adapter port.

55. (Previously presented) The host system as recited in claim 52, further comprising:

a fabric driver configured to generate the event indicating that the new fabric device has been connected to the fabric.

56. (Previously presented) The host system as recited in claim 52, wherein to access said configuration file, the fabric event agent is further configured to read a user-defined attribute in the configuration file, wherein the user-defined attribute indicates whether or not newly connected fabric devices for that host adapter port are to be dynamically configured upon detection.

57. (Original) The host system as recited in claim 31, wherein the one or more host adapter ports comprise Fibre Channel host adapter ports.

58. (Original) The host system as recited in claim 31, wherein the fabric comprises a Fibre Channel switched fabric comprising a plurality of Fibre Channel switches.

59. (Previously presented) The host system as recited in claim 31, wherein the fabric is part of a storage area network (SAN).

60. (Previously presented) The host system as recited in claim 31, wherein the fabric event agent is further configured to dynamically change the host system's fabric device configuration by verifying the one or more fabric-attached mass storage devices before bringing the one or more fabric-attached mass storage devices online, wherein said verifying comprises accessing a fabric name server to determine if the one or more fabric-attached mass storage devices are currently connected to the fabric.

61. (Currently amended) A computer readable storage medium having stored thereon data representing program instructions, wherein the program instructions are executable by one or more processors within a host system to implement:

the host system receiving from a fabric coupled to the host system an event indicating a fabric state change for one or more host adapter ports of said host system; and

the host system dynamically changing the host system's fabric device configuration in response to said receiving an event;

wherein said dynamically changing comprises bringing online or taking offline one or more fabric-attached mass storage devices for the one or more host adapter ports for the host system;

wherein said bringing online comprises creating, within an operating system executing on the host system, an operating system node corresponding to each of the one or more fabric-attached mass storage devices being brought online;

wherein said taking offline comprises disabling, within the operating system executing on the host system, an operating system node corresponding to each of the one or more fabric-attached mass storage devices being taken offline;

wherein each given operating system node provides a communication interface to a given corresponding fabric-attached mass storage device, and wherein an application running on said host system is configured to communicate with said given corresponding fabric-attached mass storage device through said given operating system node.

62. (Currently amended) The computer readable storage medium as recited in claim 61, wherein the program instructions are further executable to implement determining an event type for said event.

63. (Currently amended) The computer readable storage medium as recited in claim 62, wherein in response to determining that the event type indicates that one of the fabric host adapter ports has lost connectivity to the fabric, said dynamically changing comprises taking offline one or more fabric devices configured through the host adapter port that lost connectivity to the fabric.

64. (Currently amended) The computer readable storage medium as recited in claim 63, wherein said taking offline one or more fabric devices configured through the host adapter port that lost connectivity to the fabric comprises:

reading a persistent repository that indicates which fabric devices are currently online for the host adapter port that lost connectivity to the fabric; and

taking offline the fabric devices indicated by the persistent repository for the host adapter port that lost connectivity to the fabric.

65. (Canceled)

66. (Currently amended) The computer readable storage medium as recited in claim 62, wherein in response to determining that the event type indicates that one of the fabric host adapter ports has lost connectivity to the fabric, said dynamically changing comprises:

accessing a configuration file for the host adapter port that lost connectivity to the fabric to determine if fabric devices for that host adapter port are to be unconfigured if that host adapter port loses connectivity to the fabric; and

if the configuration file indicates that fabric devices are to be unconfigured upon lose of connectivity to the fabric, taking offline one or more fabric devices configured through the host adapter port that lost connectivity to the fabric.

67. (Currently amended) The computer readable storage medium as recited in claim 66, wherein taking offline one or more fabric devices configured through the host adapter port that lost connectivity to the fabric comprises:

reading a persistent repository that indicates which fabric devices are currently online for the host adapter port that lost connectivity to the fabric; and

taking offline the fabric devices indicated by the persistent repository for the host adapter port that lost connectivity to the fabric.

68. (Canceled)

69. (Currently amended) The computer readable storage medium as recited in claim 66, wherein the program instructions are further executable to implement, prior to said receiving an event:

a host adapter driver for one of the one or more host adapter ports becoming inactive or detached; and

generating the event indicating that one of the one or more host adapter ports has lost connectivity to the fabric.

70. (Currently amended) The computer readable storage medium as recited in claim 66, wherein said accessing a configuration file for the host adapter port that lost connectivity to the fabric comprises reading a user-defined attribute in the configuration file, wherein the user-defined attribute indicates whether or not fabric devices for that host adapter port are to be unconfigured if that host adapter port loses connectivity to the fabric.

71. (Currently amended) The computer readable storage medium as recited in claim 62, wherein in response to determining that the event type indicates that one of the fabric host adapter ports has acquired connectivity to the fabric, said dynamically changing comprises bringing online one or more fabric devices for the host adapter port that has acquired connectivity to the fabric.

72. (Currently amended) The computer readable storage medium as recited in claim 71, wherein said bringing online one or more fabric devices for the host adapter port that has acquired connectivity to the fabric comprises:

reading a persistent repository that indicates which fabric devices were previously online for the host adapter port that has acquired connectivity to the fabric; and

bringing online the fabric devices indicated by the persistent repository for the host adapter port that has acquired connectivity to the fabric.

73. (Canceled)

74. (Currently amended) The computer readable storage medium as recited in claim 62, wherein in response to determining that the event type indicates that one of the fabric host adapter ports has acquired connectivity to the fabric, said dynamically changing comprises:

accessing a configuration file for the host adapter port that has acquired connectivity to the fabric to determine if fabric devices for that host adapter port are to be configured if that host adapter port acquires connectivity to the fabric; and

if the configuration file indicates that fabric devices are to be configured upon that host adapter port's connectivity to the fabric, bringing online one or more fabric devices for that host adapter port that has acquired connectivity to the fabric.

75. (Currently amended) The computer readable storage medium as recited in claim 74, wherein bringing online one or more fabric devices configured through the host adapter port that has acquired connectivity to the fabric comprises:

reading a persistent repository that indicates which fabric devices were previously online for the host adapter port that has acquired connectivity to the fabric; and

bringing online the fabric devices indicated by the persistent repository for the host adapter port that has acquired connectivity to the fabric.

76. (Canceled)

77. (Currently amended) The computer readable storage medium as recited in claim 74, wherein the program instructions are further executable to implement, prior to said receiving an event:

a host adapter driver for one of the one or more host adapter ports becoming active or attached; and

generating the event indicating that one of the one or more host adapter ports has acquired connectivity to the fabric.

78. (Currently amended) The computer readable storage medium as recited in claim 74, wherein said accessing a configuration file for the host adapter port that has acquired connectivity to the fabric comprises reading a user-defined attribute in the configuration file, wherein the user-defined attribute indicates whether or not fabric devices for that host adapter port are to be configured if that host adapter port acquires connectivity to the fabric.

79. (Currently amended) The computer readable storage medium as recited in claim 62, wherein in response to determining that the event type indicates that a new fabric device has been connected to the fabric, said dynamically changing comprises bringing online the new fabric device for one of the one or more host adapter ports.

80. (Canceled)

81. (Currently amended) The computer readable storage medium as recited in claim 79, wherein said bringing online the new fabric device comprises updating a persistent repository to indicate that the new fabric device is online for the host adapter port.

82. (Currently amended) The computer readable storage medium as recited in claim 62, wherein in response to determining that the event type indicates that a new fabric device has been connected to the fabric, said dynamically changing comprises:

accessing a configuration file for one of the one or more host adapter ports to determine if newly connected fabric devices for that host adapter port are to be dynamically configured; and

if the configuration file indicates newly connected fabric devices are to be dynamically configured, bringing online the new fabric device for that host adapter port.

83. (Canceled)

84. (Currently amended) The computer readable storage medium as recited in claim 82, wherein said bringing online the new fabric device comprises updating a persistent repository to indicate that the new fabric device is online for the host adapter port.

85. (Currently amended) The computer readable storage medium as recited in claim 82, wherein the program instructions are further executable to implement, prior to said receiving an event:

connecting the fabric device to the fabric; and

a fabric driver generating the event indicating that the new fabric device has been connected to the fabric.

86. (Currently amended) The computer readable storage medium as recited in claim 82, wherein said accessing a configuration file comprises reading a user-defined attribute in the configuration file, wherein the user-defined attribute indicates whether or

not newly connected fabric devices for that host adapter port are to be dynamically configured upon detection.

87. (Currently amended) The computer readable storage medium as recited in claim 61, wherein the one or more host adapter ports comprise Fibre Channel host adapter ports.

88. (Currently amended) The computer readable storage medium as recited in claim 61, wherein the fabric comprises a Fibre Channel switched fabric comprising a plurality of Fibre Channel switches.

89. (Currently amended) The computer readable storage medium as recited in claim 61, wherein the fabric is part of a storage area network (SAN).

90. (Currently amended) The computer readable storage medium as recited in claim 61, wherein said dynamically changing comprises verifying the one or more fabric-attached mass storage devices before bringing the one or more fabric-attached mass storage devices online, wherein said verifying comprises accessing a fabric name server to determine if the one or more fabric-attached mass storage devices are currently connected to the fabric.